

PATENT CLAIMS

1. A device (01) having at least two components (09, 10) that are movable in relation to one another, at least one aircushion bearing element (14) being provided on the first component (10), so that it cooperates with a guideway (15) provided on the second component (09), such that the first component (10) is guided and/or supported on the second component in a non-contact manner with an air gap between the aircushion bearing element (14) and the guideway (15),  
characterized in that  
the guideway (15) is made of tiles (20) which are attached to the second component (09) side-by-side.
- 15 2. The device according to Claim 1,  
characterized in that  
the tiles (20) are made of a ceramic material, in particular Stettalit having ceramic number C221 according to VDE 0335 part 3.
- 20 3. The device according to Claim 1 or 2,  
characterized in that  
the tiles (20) are attached to an adhesive surface (21) of the second component (09) using an adhesive (22).
- 25 4. The device according to Claim 3,  
characterized in that  
the adhesive (22) has a low flow capacity.
- 30 5. The device according to Claim 3 or 4,  
characterized in that  
a two-component construction adhesive is used as the adhesive (22).

6. The device according to any one of Claims 3 through 5, characterized in that the adhesive surface (21) of the second component (09) has a peak-to-valley height of approximately 50  $\mu\text{m}$  to 100  $\mu\text{m}$  before applying the adhesive (22).
7. The device according to any one of Claims 1 through 6, characterized in that a hardenable filler material is provided in the transitional area (23) between adjacent tiles (20).
8. The device according to any one of Claims 1 through 7, characterized in that the areas of the tiles (20) and/or filler material forming the guideway (15) are machined at the surface, in particular by grinding and/or lapping after hardening of the adhesive and/or filler material.
9. The device according to any one of Claims 1 through 8, characterized in that the guideway (15) has a peak-to-valley height of less than or equal to 1  $\mu\text{m}$ .
10. The device according to any one of Claims 1 through 9, characterized in that the guideway (15) has a flatness of less than or equal to 2  $\mu\text{m}/200 \text{ mm}$ .
11. The device according to any one of Claims 1 through 10, characterized in that the second component (09) is manufactured as a welded

construction of multiple steel parts (17).

12. The device according to Claim 11,  
characterized in that  
5 the steel parts (17) are produced by laser cutting.

13. The device according to Claim 11 or 12,  
characterized in that  
the steel parts (17) are joined together by laser welding.

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14. The device according to any one of Claims 11 through 13,  
characterized in that  
low-stress annealing is performed on the second component (09)  
after welding the steel parts (17).

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15. The device according to any one of Claims 11 through 14,  
characterized in that  
the second component (09) is treated at the surface, in particular  
by sandblasting and/or with a corrosion-resistant coating, after  
20 welding or after annealing.

16. The device according to any one of Claims 11 through 15,  
characterized in that  
tongue-and-groove elements are provided for pre-assembly on the  
25 steel parts (17) to be joined together.

17. The device according to any one of Claims 1 through 16,  
characterized in that  
the device (01) is designed in the manner of a measuring machine,  
30 in particular a coordinate measuring machine having a movably  
mounted measurement head for measuring workpieces.

18. The device according to Claim 17,  
characterized in that  
the measuring machine (01) has at least two vertical connections  
(07, 08) and one horizontal crossbeam (09) supported on the  
vertical connections (07, 08), whereby the vertical connections  
(07, 08) together with the horizontal crossbeam (09) form a portal  
(05) above a standing surface (02) on which the workpiece to be  
measured can be arranged.

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10 19. The device according to Claim 18,  
characterized in that  
the vertical connections (07, 08) have a vertical length in the  
range of approximately 0.5 meter to 5 meters, in particular  
1.2 meter.

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20. The device according to Claim 18 or 19,  
characterized in that  
the horizontal crossbeam (09) has a horizontal span between the  
vertical crossbeams in the range of approximately 0.5 meter to  
5 meters, especially 1.5 meter.

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